

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [62 FR 59277 NO. 212 11/03/97]

[Docket No. 97-CE-90-AD; Amendment 39-10188; AD 97-23-01]

RIN 2120-AA64

Airworthiness Directives; Fairchild Aircraft, Inc. SA226 and SA227 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

**SUMMARY:** This amendment supersedes Airworthiness Directive (AD) 93-15-02 R2, which currently requires the following on Fairchild Aircraft, Inc. (Fairchild Aircraft) SA226 and SA227 series airplanes that are equipped with a certain Simmonds-Precision pitch trim actuator: repetitively measuring the freeplay of the pitch trim actuator and repetitively inspecting the actuator for rod slippage; immediately replacing any actuator if certain freeplay limitations are exceeded or rod slippage is evident; and, eventually replacing the actuator regardless of the inspection results. This action retains the repetitive inspection and replacement requirements, adds the repetitive inspections after the installation of certain Barber-Colman pitch trim actuators, and removes the terminating action. This action is the result of a failure of the no-backs on a Barber-Colman pitch trim actuator installed on a Fairchild Aircraft SA227 series airplane. The actions specified by this AD are intended to prevent failure of the pitch trim actuator, which could cause loss of control of the airplane.

**DATES:** Effective December 1, 1997.

The incorporation by reference of Fairchild Aircraft SA226 Series Service Letter 226-SL-014, Fairchild Aircraft SA227 Series Service Letter 227-SL-031, and Fairchild Aircraft SA227 Series Service Letter CC7-SL-021, all Issued: October 3, 1997, is approved by the Director of the Federal Register as of December 1, 1997.

The incorporation by reference of Fairchild Aircraft SA226 Series Service Letter 226-SL-005, and Fairchild Aircraft SA227 Series Service Letter 227-SL-011, both Issued: April 8, 1993, Revised: May 22, 1996, listed in the regulations was previously approved by the Director of the Federal Register as of July 25, 1996 (61 FR 36817, July 15, 1996).

Comments for inclusion in the Rules Docket must be received on or before January 2, 1998.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket 97-CE-90-AD, Room 1558, 601 E. 12th Street, Kansas City, Missouri 64106.

Service information that applies to this AD may be obtained from Field Support Engineering, Fairchild Aircraft, Inc., P.O. Box 790490, San Antonio, Texas 78279-0490; telephone (210) 824-9421; facsimile (210) 820-8609. This information may also be examined at the FAA, Central Region, Office of the Regional Counsel, Attention: Rules Docket 97-CE-90-AD, Room 1558, 601 E. 12th Street, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Mr. Werner Koch, Aerospace Engineer, FAA, Airplane Certification Office, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0150; telephone (817) 222-5133; facsimile (817) 222-5960.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

Airworthiness Directive (AD) 93-15-02 R2, Amendment 39-9689 (61 FR 36817, July 25, 1996), currently requires the following on Fairchild Aircraft SA226 and SA227 series airplanes that are equipped with a certain Simmonds-Precision pitch trim actuator: repetitively measuring the freeplay of the pitch trim actuator and repetitively inspecting the actuator for rod slippage; immediately replacing any actuator if certain freeplay limitations are exceeded or rod slippage is evident; and eventually replacing the actuator regardless of the inspection results.

Accomplishment of the inspections required by AD 93-15-02 R2 is in accordance with Fairchild Aircraft SA226 Series Service Letter (SL) 226-SL-005, or Fairchild Aircraft SA227 Series SL 227-SL-011, both Issued: April 8, 1993, Revised: May 22, 1996.

In addition, AD 93-15-02 R2, Amendment 39-9689 (61 FR 36817, July 15, 1996), eliminates the initial inspection and the repetitive inspection if a Barber-Colman actuator (part number (P/N) 27-19008-001 or -002) is installed.

**Actions Since Issuance of the Previous Rule**

Since issuance of AD 93-15-02 R2, the FAA received an incident report of a failure of a pitch trim actuator installed on a Fairchild SA227 series airplane during a landing approach. The failure was specifically of the no-backs on a Barber-Colman pitch trim actuator (P/N 27-19008-002), which caused the horizontal stabilizer to go full leading edge down, resulting in a violent pitch-up of the airplane. According to the report, both pilots had to use extreme force on the control column to recover from the pitch-up and get the airplane safely on the ground.

Because of this incident, Fairchild re-examined the possible fail rate of these pitch trim actuators. This examination shows that the no-backs in the Barber-Colman pitch trim actuators installed on the Fairchild SA226 and SA227 series airplanes are subject to failure after accumulating a certain amount of hours time-in-service (TIS). As a result, Fairchild now recommends repetitive inspections of the Barber-Colman pitch trim actuators (P/N 27-19008-001/-002).

**Relevant Service Information**

Fairchild has issued SA226 Series Service Letter (SL) 226-SL-014, Fairchild Aircraft SA227 Series SL 227-SL-031, and Fairchild Aircraft SA227 Series SL CC7-SL-021, all Issued: October 3, 1997, which specify procedures for inspecting and testing all Fairchild SA226 and SA227 series airplanes equipped with a Barber-Colman pitch trim actuator P/N 27-19008-001 or -002.

**The FAA's Determination**

After examining the circumstances and reviewing all available information related to the incidents described above, including the referenced service information, the FAA has determined that AD action should be taken in order to prevent failure of the pitch trim actuator, which could cause loss of control of the airplane.

**Explanation of the Provisions of This AD**

Since an unsafe condition has been identified that is likely to exist or develop in other Fairchild SA226 and SA227 series airplanes of the same type design, the FAA is issuing this AD to supersede AD 93-15-02 R2. This AD retains the inspection requirements for airplanes equipped with the Simmonds-Precision pitch trim actuators, and changes the inspection requirements for airplanes equipped with Barber-Colman pitch trim actuators to require repetitively inspecting the actuator. This action eliminates the terminating action in AD 93-15-02 R2. Inspecting the Barber-Colman actuator (P/N 27-19008-001 or -002) is required in accordance with the instructions in Fairchild SL 226-SL-014, SL 227-SL-031, or CC7-SL-021, all Issued: October 3, 1997, whichever is applicable. Inspecting the Simmonds-Precision actuators will continue to be accomplished in accordance with

Fairchild Aircraft SA226 Series SL 226-SL-005, or Fairchild Aircraft SA227 Series SL 227-SL-011, both Issued: April 8, 1993, Revised: May 22, 1996.

### **Determination of the Effective Date of the AD**

Since a situation exists (failure of the pitch-trim actuators) that requires the immediate adoption of this regulation, it is found that notice and opportunity for public prior comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

### **Comments Invited**

Although this action is in the form of a final rule that involves requirements affecting immediate flight safety and, thus, was not preceded by notice and opportunity to comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 97-CE-90-AD." The postcard will be date stamped and returned to the commenter.

### **Regulatory Impact**

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket (otherwise, an evaluation is not required). A copy of it, if filed, may be obtained from the Rules Docket.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 USC 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing AD 93-15-02 R2, Amendment 39-9689 (61 FR 36817, July 15, 1996), and by adding a new airworthiness directive (AD) to read as follows:

**97-23-01 FAIRCHILD AIRCRAFT, INC.:** Amendment 39-10188; Docket No. 97-CE-90-AD. Supersedes AD 93-15-02 R2, Amendment 39-9689.

**Applicability:** All SA226 and SA227 series airplanes (all models and serial numbers), certificated in any category, that are equipped with a Simmonds-Precision pitch trim actuator, (part number (P/N) DL5040M5 or P/N DL5040M6) or a Barber-Colman pitch trim actuator (P/N 27-19008-001 or P/N 27-19008-002).

**NOTE 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required as indicated in the body of this AD, unless already accomplished.

To prevent failure of the pitch trim actuator, which could cause loss of control of the airplane, accomplish the following:

**NOTE 2:** The paragraph structure of this AD is as follows:

Level 1: (a), (b), (c), etc.

Level 2: (1), (2), (3), etc.

Level 3: (i), (ii), (iii), etc.

Level 2 and Level 3 structures are designations of the Level 1 paragraph they immediately follow.

(a) Accomplish the following at the times specified in the chart in paragraph (b) of this AD:

**(1) Initial and repetitive inspections:**

(i) For airplanes equipped with a Simmonds-Precision actuator, P/N DL5040M5 and P/N DL5040M6, measure the freeplay (inspection) of the pitch trim actuator and inspect the actuator for rod slippage in accordance with the INSTRUCTIONS section of Fairchild Aircraft SA226 Series Service Letter (SL) 226-SL-005, or Fairchild Aircraft SA227 Series SL 227-SL-011, both Issued: April 8, 1993, Revised: May 22, 1996, as applicable.

(ii) For airplanes equipped with Barber-Colman actuators, P/N 27-19008-001 or P/N 27-19008-002, conduct a functional inspection of the actuator in accordance with the INSTRUCTIONS section of Fairchild Aircraft SL 226-SL-014, 227-SL-031, or CC7-SL-021, Issued: October 3, 1997, whichever is applicable.

**NOTE 3:** The actions in this AD are the same as the actions in AD 93-15-02 R2, except for the repetitive inspections added to the Barber-Colman actuators, P/N 27-19008-001 or P/N 27-19008-002.

**(2) Initial and repetitive replacements:** Replace the pitch trim actuator with one of the following, in accordance with the instructions in the applicable maintenance manual at the time specified in the Repetitive Replacement column of the chart in paragraph (b) of this AD. However, if certain freeplay limitations that are specified in the service letters are exceeded or if rod slippage is found, replace the pitch trim actuator prior to further flight.

(i) A new Simmonds-Precision actuator, P/N DL5040M5 or P/N DL5040M6.

(ii) A pitch trim actuator with an overhauled, zero-timed part of the same design and part number.

(iii) A Barber-Colman actuator, P/N 27-19008-001 or P/N 27-19008-002.

(b) The following chart presents the initial and repetitive inspection and replacement compliance times of this AD:

<b>Condition</b>	<b>Initial Inspection</b>	<b>Repetitive Inspection</b>	<b>Repetitive Replacement</b>
<b>With an original Simmonds-Precision actuator, P/N DL5040M5, installed.</b>	Upon accumulating 3,000 hours TIS on a Simmonds-Precision P/N DL5040M5 actuator or within 50 hours TIS after April 17, 1995 (the effective date of AD 93-15-02 R1), whichever occurs later.	Every 250 hours TIS after initial inspection until accumulating 5,000 hours TIS on the actuator or 500 hours TIS after the last inspection required by AD 93-15-02 R1, whichever occurs later.	Initially upon accumulating 5,000 hours TIS on the actuator or 500 hours TIS after the initial inspection, whichever occurs later, and thereafter as indicated below.
<b>With a replacement Simmonds-Precision actuator, P/N DL5040M5, installed.</b>	Initially upon accumulating 5,000 hours TIS on the new actuator, or within 50 hours TIS after April 17, 1995 (the effective date of AD 93-15-02 R1), whichever occurs later.	Every 300 hours TIS after the initial inspection until accumulating 6,500 hours TIS on the actuator.	Upon accumulating 6,500 hours TIS on the actuator.
<b>With a replacement Simmonds-Precision actuator, P/N DL5040M6, installed. This part can be new, modified from a P/N DL5040M5 actuator, or overhauled and zero-timed.</b>	Initially upon accumulating 7,500 hours TIS on the new or modified actuator, or within 50 hours TIS after April 17, 1995 (the effective date of AD 93-15-02 R1), whichever occurs later.	Every 300 hours TIS after the initial inspection until accumulating 9,900 hours TIS on the actuator.	Upon accumulating 9,900 hours TIS on the actuator.

<b>Condition</b>	<b>Initial Inspection</b>	<b>Repetitive Inspection</b>	<b>Repetitive Replacement</b>
<b>With a replacement P/N DL5040M5 actuator installed that was overhauled and zero-timed where both nut assemblies, P/N AA56142, were replaced with new assemblies during overhaul.</b>	Initially upon accumulating 5,000 hours TIS on the over-hauled actuator, or within 50 hours TIS after April 17, 1995 (the effective date of AD 93-15-02 R1), whichever occurs later.	Every 300 hours TIS after the initial inspection until accumulating 6,500 hours TIS on the actuator.	Upon accumulating 6,500 hours TIS on the actuator.
<b>With a replacement P/N DL5040M5 actuator installed that was overhauled and zero-timed where both nut assemblies, P/N AA56142, were not replaced with new assemblies during overhaul.</b>	Initially upon accumulating 3,000 hours TIS on the over-hauled actuator, or within 50 hours TIS after April 17, 1995 (the effective date of AD 93-15-02 R1), whichever occurs later.	Every 250 hours TIS after the initial inspection until accumulating 5,000 hours TIS on the actuator.	Upon accumulating 5,000 hours TIS on the actuator.
<b>With a Barber-Colman pitch trim actuator installed, P/N 27-19008-001 or 27-19008-002, currently in-service with less than 1,000 hours TIS since new or overhauled, zero-timed.</b>	Upon accumulating 500 hours total TIS on the new or overhauled zero-timed pitch trim actuator, or within 50 hours TIS after the effective date of this AD, whichever occurs later.	Every 300 hours TIS after the initial inspection.	None.
<b>For newly fabricated and over-hauled, zero-timed Barber-Colman actuator, P/N 27-19008-001 or P/N 27-19008-002 actuators.</b>	Upon accumulating 500 hours total TIS on the actuator, or within 50 hours TIS after the effective date of this AD, whichever occurs later.	Every 300 hours TIS after the initial inspection.	None.

(c) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(d) An alternative method of compliance or adjustment of the initial or repetitive compliance times that provides an equivalent level of safety may be approved by the Manager, Airplane Certification Office (ACO), FAA, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0150. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Fort Worth Airplane Certification Office. Alternative methods of compliance, approved in accordance with AD 93-15-02 R2, are not considered to be approved as alternative methods of compliance with this AD.

NOTE 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Fort Worth Airplane Certification Office.

(e) The inspections required by this AD for Fairchild SA226 and SA227 series airplanes equipped with Barber-Colman pitch trim actuators shall be done in accordance with Fairchild Aircraft SA226 Series Service Letter 226-SL-014, Fairchild Aircraft SA227 Series Service Letter 227-SL-031, or Fairchild Aircraft SA227 Series Service Letter CC7-SL-021, all Issued: October 3, 1997, whichever is applicable. This incorporation by reference is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The inspections required by this AD on Fairchild Aircraft SA226 and SA227 series airplanes equipped with Simmonds-Precision pitch trim actuators shall be done in accordance with Fairchild Aircraft SA226 Series Service Letter (SL) 226-SL-005, and Fairchild Aircraft SA227 Series SL 227-SL-011, both Issued: April 8, 1993, Revised: May 22, 1996. This incorporation by reference was previously approved by the Director of the Federal Register as of July 25, 1996 (61 FR 36817, July 15, 1996). Copies of all of the documents may be obtained from Field Support Engineering, Fairchild Aircraft Inc., P.O. Box 790490, San Antonio, Texas 78279-0490. Copies may be inspected at the FAA, Central Region, Office of the Regional Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(f) This amendment supersedes AD 93-15-02 R2, Amendment 39-9689.

(g) This amendment becomes effective on December 1, 1997.

#### FOR FURTHER INFORMATION CONTACT:

Mr. Werner Koch, Aerospace Engineer, FAA, Airplane Certification Office, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0150; telephone (817) 222-5133; facsimile (817) 222-5960.